

What is claimed is:

- 1) A method for the prevention, delay of progression or the treatment of neurodegenerative disorders, cognitive disorders and for improving memory and learning ability, comprising administering to a warm-blooded animal, including man, in need thereof, a therapeutically effective amount of a DPP-IV inhibitor.
- 2) Use of a DPP-IV inhibitor or pharmaceutically acceptable salt thereof, for the manufacture of a medicament for the prevention, delay of progression or the treatment of neurodegenerative disorders, cognitive disorders and for improving memory (both short term and long term) and learning ability.
- 3) A pharmaceutical composition comprising a therapeutically effective amount of a DPP-IV inhibitor in combination with one or more pharmaceutically acceptable carriers for the prevention, delay of progression or the treatment of neurodegenerative disorders, cognitive disorders and for improving memory (both short term and long term) and learning ability.
- 4) The method of claim 1, the use of claim 2, the composition of claim 3, wherein the neurodegenerative disorder is selected from dementia, senile dementia, mild cognitive impairment, Alzheimer related dementia, Huntington's chorea, tardive dyskinesia, hyperkinesias, mania, Morbus Parkinson, steel-Richard syndrome, Down's syndrome, myasthenia gravis, nerve and brain trauma, vascular amyloidosis, cerebral haemorrhage with amyloidosis, brain inflammation, Friedrich's ataxia, acute confusion disorders, acute confusion disorders in which apoptotic necrocytosis plays a part, amyotrophic lateral sclerosis, glaucoma, and Alzheimer's disease.
- 5) The method of claim 1, the use of claim 2, the composition of claim 3, wherein the neurodegenerative disorder is selected from the group comprising Alzheimer's disease and dementia, preferably senile dementia, mild cognitive impairment or Alzheimer type dementia.

- 39 -

- 6) The method of claim 1, the use of claim 2, the composition of claim 3, for preventing or delaying the onset of dementia associated with Alzheimer's disease in a patient with age related cognitive decline or in a patient with mild cognitive impairment.
- 7) The method of claim 1, the use of claim 2, the composition of claim 3, for preventing or delaying the onset of Alzheimer's disease in a patient suffering from age-related cognitive decline or mild cognitive impairment.
- 8) The method of claim 1, the use of claim 2, the composition of claim 3, wherein the cognitive disorder is selected from cognitive deficits associated with schizophrenia, age-induced memory impairment, cognitive deficits associated with psychosis, cognitive impairment associated with diabetes, cognitive deficits associated with post-stroke, memory defects associated with hypoxia, cognitive and attention deficits associated with senile dementia, attention-deficit disorders, memory problems associated with mild cognitive impairment, impaired cognitive function associated with dementias, impaired cognitive function associated with Alzheimer's disease, impaired cognitive function associated with Parkinson's disease, impaired cognitive function associated with vascular dementia, cognitive problems associated with brain tumors, Pick's disease, cognitive deficits due to autism, cognitive deficits post electroconvulsive therapy, cognitive deficits associated with traumatic brain injury, amnesic disorders, deliriums, dementias.
- 9) The method of claim 1, the use of claim 2, the composition of claim 3, wherein the cognitive disorder is selected from disorders of learning acquisition (learning disorders), memory consolidation, retrieval memory and retention disorders.
- 10) The method of claim 1, the use of claim 2, the composition of claim 3, wherein the cognitive disorder is selected from cognitive impairment associated with diabetes, impaired cognitive function associated with Alzheimer's disease, impaired cognitive function associated with Parkinson's disease, cognitive deficits associated with post-stroke, cognitive and attention deficits associated with senile dementia, memory problems associated with mild cognitive impairment.

- 40 -

11) The method of claim 1, the use of claim 2, the composition of claim 3, wherein the cognitive disorder is selected from cognitive impairment associated with diabetes, impaired cognitive function associated with Alzheimer's disease, cognitive deficits associated with post-stroke.

12) The method of claim 1, the use of claim 2, the composition of claim 3, to improve learning speed and potential in educational and rehabilitation contexts.

13) The method of claim 1, the use of claim 2, the composition of claim 3 for treating impaired memory or learning which is age-associated, is consequent upon electroconvulsive therapy or which is the result of brain damage.

14) The method of claim 1, the use of claim 2, the composition of claim 3, for preventing, retarding or arresting any further age-related cognitive decline or progression of mild cognitive impairment.

15) The method of claim 1, the use of claim 2, the composition of claim 3 for treating impaired memory or learning which is the result of brain damage caused by; stroke, anesthetic accident, head trauma, hypoglycemia, carbon monoxide poisoning, lithium intoxication or a vitamin deficiency.

16) The method of claim 1, the use of claim 2, the composition of claim 3 for treating and/or preventing memory impairment.

17) The method of claim 1, the use of claim 2, the composition of claim 3 for treating and/or preventing memory impairment due to toxicant exposure, brain injury, brain aneurysm, age-associated memory impairment, mild cognitive impairment, epilepsy, mental retardation in children, and dementia resulting from a disease, such as Parkinson's disease, Alzheimer's disease, AIDS, head trauma, Huntington's disease, Pick's disease, Creutzfeldt-Jakob disease, and stroke.

18) The method of any one of claims 1 to 17, the use of any one of claims 1 to 17, the composition of any one of claims 1 to 17, wherein the DPP-IV inhibitor is selected from 1-{2-[(5-cyanopyridin-2-yl) amino] ethylamino} acetyl-2-(S)-cyano-pyrrolidine, vildagliptin, L-threo-isoleucyl thiazolidine, MK-0431, GSK23A, saxagliptin, 3-(aminomethyl)-2-isobutyl-1-oxo-4-phenyl-1,2-dihydro-6-isoquinolinecarboxamide and 2-{[3-(aminomethyl)-2-isobutyl-4-phenyl-1-oxo-1,2-dihydro-6-isoquinolyl]oxy}acetamide, and optionally in any case pharmaceutical salts thereof.

19) The method of any one of claims 1 to 17, the use of any one of claims 1 to 17, the composition of any one of claims 1 to 17, wherein the DPP-IV inhibitor is vildagliptin or a pharmaceutically acceptable salt thereof.

20) The method of any one of claims 1 to 19, the use of any one of claims 1 to 19, the composition of any one of claims 1 to 19, wherein the DPP-IV inhibitor is administered in combination with at least one further drug which can be used for the prevention, delay of progression, or treatment of neurodegenerative disorders, cognitive disorders or a drug for improving memory.

21) A pharmaceutical composition comprising

- a) a DPP-IV inhibitor or a pharmaceutically acceptable salt thereof and
- b) at least one drug which can be used for the prevention, delay of progression or treatment of neurodegenerative disorders, cognitive disorders or a drug for improving memory;, and
- c) at least one pharmaceutically acceptable carrier.

22) The pharmaceutical composition according to claim 21, wherein the DPP-IV inhibitor is selected from 1-{2-[(5-cyanopyridin-2-yl) amino] ethylamino} acetyl-2-(S)-cyano-pyrrolidine, vildagliptin, L-threo-isoleucyl thiazolidine, MK-0431, GSK23A, saxagliptin, 3-(aminomethyl)-2-isobutyl-1-oxo-4-phenyl-1,2-dihydro-6-isoquinolinecarboxamide and 2-{[3-(aminomethyl)-2-isobutyl-4-phenyl-1-oxo-1,2-dihydro-6-isoquinolyl]oxy}acetamide, and optionally in any case pharmaceutical salts thereof.

- 42 -

23) The pharmaceutical composition according to claim 21, wherein the DPP-IV inhibitor is vildagliptin, or a pharmaceutically acceptable salt thereof.

24) The pharmaceutical composition according to any of claims 21 to 23, the use according to claim 20, the method according to claim 20, wherein the drug which can be used for the prevention, delay of progression or treatment of neurodegenerative disorders, cognitive disorders or a drug for improving memory, is selected from anti-inflammatory drugs, antioxidants agents, neuroprotective agents, glutamate receptor antagonists, acetylcholine esterase inhibitors, butyrylcholinesterase inhibitors, MAO inhibitors, dopamine agonist or antagonist, inhibitors of gamma and beta secretases, inhibitors of amyloid aggregation, amyloid beta peptide, antibodies to amyloid beta peptide, inhibitors of acetylcholinesterase, agents directed at modulating GABA, NMDA, cannabinoid, AMPA, kainate, phosphodiesterase (PDE), PKA, PKC, CREB or nootropic systems.

25) A pharmaceutical composition according to any of claims 21 to 23, the use according to claim 20, the method according to claim 20, wherein the drug which can be used for the prevention, delay of progression or treatment of neurodegenerative disorders, cognitive disorders or the drug for improving memory, is selected from donepezil, rivastigmine, ipidacrine, tacrine, stacofylline, galantamine, metrifonate, eptastigmine, velnacrine, physostigmine, icozepil, amiridine, minaprine, huperzine, huprine, bis-tetrahydroaminoacridine (bis-THA), imidazoles, 1,2,4-thiadiazolidinone, benzazepine, 4,4'-bipyridine, indenoquinolinylamine, decamethonium, edrophonium, propidium, fasciculins, organophosphates, carbamates, Imino 1,2,3,4- tetrahydrocyclopent[b]indole carbamates, N-Pyrimidine 4-acetylaniline, 7- aryloxy coumarin, propargylamino carbamates, zifrosilone, NOS inhibitors, ACh precursors, choline pyrrolidinedholine, cholinergic receptor agonists, vitamins C and E, memantine, rasagiline, selegiline, tranylcypromine, iproniazid, clorgyline, phenelzine, isocarboxazid, tolcapone and entacapone, naproxen sodium, diclofenac sodium, diclofenac potassium, celecoxib, sulindac, oxaprozin, diflunisal, etodolac, meloxicam, ibuprofen, ketoprofen, nabumetone, refecoxib, methotrexate, leflunomide, sulfasalazine, gold salts, RHo-D Immune Globulin, mycophenylate mofetil, cyclosporine, azathioprine, tacrolimus, basiliximab, daclizumab, salicylic acid, acetylsalicylic acid, methyl salicylate, diflunisal, salsalate, olsalazine, sulfasalazine, acetaminophen, indomethacin, sulindac,

- 43 -

mefenamic acid, meclofenamate sodium, tolmetin, ketorolac, dichlofenac, flurbiprofen, oxaprozin, piroxicam, meloxicam, ampiroxicam, droxicam, pivoxicam, tenoxicam, phenylbutazone, oxyphenbutazone, antipyrine, aminopyrine, apazone, zileuton, aurothioglucose, gold sodium thiomalate, auranofin, methotrexate, colchicine, allopurinol, probenecid, sulfinpyrazone and benzbromarone or betamethasone and other glucocorticoids, and pharmaceutically acceptable salts thereof.

26) A pharmaceutical composition according to any of claims 21 to 23, the use according to claim 20, the method according to claim 20, wherein the drug which can be used for the prevention, delay of progression or treatment of neurodegenerative disorders, cognitive disorders or the drug for improving memory, is selected from donepezil, tacrine, rivastigmine, galantamine, vitamin C, vitamin E, memantine, rasagiline, selegiline, tranylcypromine, iproniazid, clorgyline, phenelzine and isocarboxazid.